

Confidential Claim Retracted

Authorized by: SC

Date: 6/20/13

AIR QUALITY MONITORING PROGRAM

One 168-hour sample is taken each month at each of the four locations specified by Marc Nelson. They are collected about three meters above the ground on GF/A Glass Microfibre filter paper, using an RAC Heavy-duty Sampler.

AMBIENT RADON STUDY

Radon-222 is monitored continuously at each of the air sampling locations as specified by Marc Nelson. The samples are monitored by the use of the Model RGM-2 Radon Gas Monitor. Normal data output is printed hourly and a 24 hour average is printed at the end of a 24 hour period.



9404234

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POL-EPA01-0005165

JACKPILE - WATER RADIOLOGICAL ANALYSIS

(THIRD QUARTER, 1980)

<u>DESCRIPTIVE LOCATION</u>	<u>Radium-226 pCi/L</u>			<u>Uranium-Natural ppm</u>		
	<u>July</u>	<u>August</u>	<u>Sept.</u>	<u>July</u>	<u>August</u>	<u>Sept.</u>
Rio Paguete Upstream	0.39	0.17	0.18	0.010	0.002	0.004
Rio Moquino Upstream	0.67	0.04	0.34	0.001	0.009	0.006
Rio Paguete Above the Confluence	4.59	5.20	2.16	0.058	0.038	0.038
Rio Moquino Above the Confluence	1.28	1.26	1.31	0.036	0.078	0.049
Rio Paguete Ford Crossing	4.66	4.06	3.00	0.222	0.215	0.293
Paguete Reservoir	1.19	0.62	2.20	0.050	0.063	0.185
Jackpile Well #4	0.63	0.43	0.74	0.002	0.003	0.013
Jackpile New Shop	3.83	2.48	3.42	0.001	0.022	0.018
Jackpile Old Shop	1.91	0.87	2.37	0.037	0.063	0.083

JACKPILE
WATER CHEMICAL ANALYSIS

DATE: July, 1980

DESCRIPTIVE LOCATION	DATE	pH	TDS ppm	Cond umhos	HCO ₃ ⁻ ppm	Cl ⁻ ppm	SO ₄ ⁼ ppm	Na ⁺ ppm	K ⁺ ppm	Ca ⁺⁺ ppm	Mg ⁺⁺ ppm	NO ₃ ⁻ ppm	F ⁻ ppm	SiO ₂ ppm	Mn ⁺⁺ ppm		
Rio Paguate (Upstream)	7-2-80	8.2	567	800	357	14	183	41	8	80	36	1	0.38	28	<0.10		
Rio Moquino (Upstream)	7-2-80	8.2	1566	2150	229	21	1003	170	23	107	112	1	0.60	16	<0.10		
Rio Paguate (Above the Confluence)	7-2-80	8.2	688	1000	290	16	320	64	11	64	40	1	0.45	30	<0.10		
Rio Moquino (Above the Confluence)	7-2-80	8.2	2086	2850	266	24	1390	226	24	146	128	1	0.90	15	<0.10		
Rio Paguate (Ford Crossing)	7-2-80	8.2	2112	2800	297	28	1382	222	27	143	147	1	0.80	15	<0.10		
Paguate Reservoir	7-2-80	8.0	2681	3450	203	48	1828	308	60	150	184	1	0.81	2	<0.10		
Jackpile #4	7-2-80	8.6	728	1250	362	9	300	222	4	3	1	1	1.05	9	<0.10		
Jackpile New Shop	7-2-80	8.2	1263	2150	412	31	659	334	9	12	1	1	1.15	13	<0.10		
Jackpile Old Shop	7-2-80	8.4	1217	1950	276	34	693	274	10	30	28	7	1.05	4	<0.10		
			As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm		
Rio Paguate (Upstream)	7-2-80	<0.005	0.45	<0.001	<0.005	0.008	<0.0005	<0.005	0.008	<0.10	0.014	<0.01	<0.005	0.02			
Rio Moquino (Upstream)	7-2-80	<0.005	0.11	<0.001	<0.005	0.047	<0.0005	<0.005	0.007	<0.10	0.017	<0.01	<0.005	0.02			
Rio Paguate (Above the Confluence)	7-2-80	<0.005	0.16	<0.001	<0.005	0.016	<0.0005	<0.005	0.007	<0.10	0.007	<0.01	<0.005	0.02			
Rio Moquino (Above the Confluence)	7-2-80	<0.005	0.17	<0.001	<0.005	0.049	<0.0005	<0.005	0.009	<0.10	0.012	<0.01	<0.005	0.02			
Rio Paguate (Ford Crossing)	7-2-80	<0.005	0.22	<0.001	<0.005	0.048	<0.0005	<0.005	0.011	<0.10	0.026	<0.01	<0.005	0.02			
Paguate Reservoir	7-2-80	<0.005	0.14	<0.001	<0.005	0.053	<0.0005	<0.005	0.010	<0.10	0.012	<0.01	<0.005	0.03			
Jackpile #4	7-2-80	<0.005	0.05	<0.001	<0.005	0.038	<0.0005	<0.005	0.007	<0.10	0.016	<0.01	<0.005	0.01			
Jackpile New Shop	7-2-80	<0.005	0.05	<0.001	<0.005	0.058	<0.0005	<0.005	0.005	<0.10	0.054	<0.01	<0.005	0.02			

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JACKPILE
WATER CHEMICAL ANALYSIS

DATE: August, 1980

DESCRIPTIVE LOCATION	DATE	pH	TDS ppm	Cond umhos	HCO ₃ ⁻ ppm	Cl ⁻ ppm	SO ₄ ⁼ ppm	Na ⁺ ppm	K ⁺ ppm	Ca ⁺⁺ ppm	Mg ⁺⁺ ppm	NO ₃ ⁻ ppm	F ⁻ ppm	SiO ₂ ppm	Mn ⁺⁺ ppm		
Rio Paguate (Upstream)	8-13-80	8.5	528	770	354	12	160	29	7	87	31	< 1	0.42	26	< 0.10		
Rio Moquino (Upstream)	8-13-80	8.2	1617	2150	217	21	1033	188	23	116	110	< 1	0.64	18	< 0.10		
Rio Paguate (Above the Confluence)	8-13-80	8.3	500	640	216	14	218	37	8	54	35	< 1	0.43	26	< 0.10		
Rio Moquino (Above the Confluence)	8-13-80	8.2	2457	3050	244	27	1625	274	28	189	175	< 1	0.98	17	< 0.10		
Rio Paguate (Ford Crossing)	8-13-80	8.2	1494	2050	262	27	913	165	21	116	100	< 1	0.74	21	< 0.10		
Paguate Reservoir	8-13-80	7.6	4288	5350	135	13	3061	528	84	198	330	< 1	1.05	6	< 0.10		
Jackpile #4	8-13-80	8.6	826	1300	379	32	335	248	4	6	1	< 1	1.15	12	< 0.10		
Jackpile New Shop	8-13-80	8.4	1307	2100	415	31	665	361	9	18	2	1	1.25	15	< 0.10		
Jackpile Old Shop	8-29-80	8.0	1347	2000	340	32	738	292	12	58	31	6	0.80	11	< 0.10		
		As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mn ppm	Ni ppm	V ppm			
Rio Paguate (Upstream)	8-13-80	< 0.005	0.14	< 0.001	< 0.005	0.006	< 0.005	< 0.005	0.006	< 0.10	0.013	0.006	< 0.005	< 0.01			
Rio Moquino (Upstream)	8-13-80	< 0.005	0.16	< 0.001	< 0.005	0.013	< 0.005	< 0.005	0.005	< 0.10	0.025	< 0.005	< 0.005	< 0.01			
Rio Paguate (Above the Confluence)	8-13-80	< 0.005	0.10	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	0.003	< 0.10	0.008	0.005	< 0.005	< 0.01			
Rio Moquino (Above the Confluence)	8-13-80	< 0.005	0.19	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	0.003	< 0.10	0.010	0.006	< 0.005	< 0.01			
Rio Paguate (Ford Crossing)	8-13-80	< 0.005	0.16	< 0.001	< 0.005	0.005	< 0.005	< 0.005	0.002	< 0.10	0.009	< 0.005	< 0.005	< 0.01			
Paguate Reservoir	8-13-80	0.011	0.18	< 0.001	< 0.005	0.005	< 0.005	< 0.005	0.002	< 0.10	0.012	< 0.005	< 0.005	< 0.01			
Jackpile #4	8-13-80	< 0.005	0.05	< 0.001	< 0.005	0.023	< 0.005	< 0.005	0.003	< 0.10	0.019	< 0.005	< 0.005	< 0.01			
Jackpile New Shop	8-13-80	< 0.005	0.05	< 0.001	< 0.005	0.020	< 0.005	< 0.005	0.008	< 0.10	0.046	< 0.005	< 0.005	< 0.01			

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JACKPILE
WATER CHEMICAL ANALYSIS

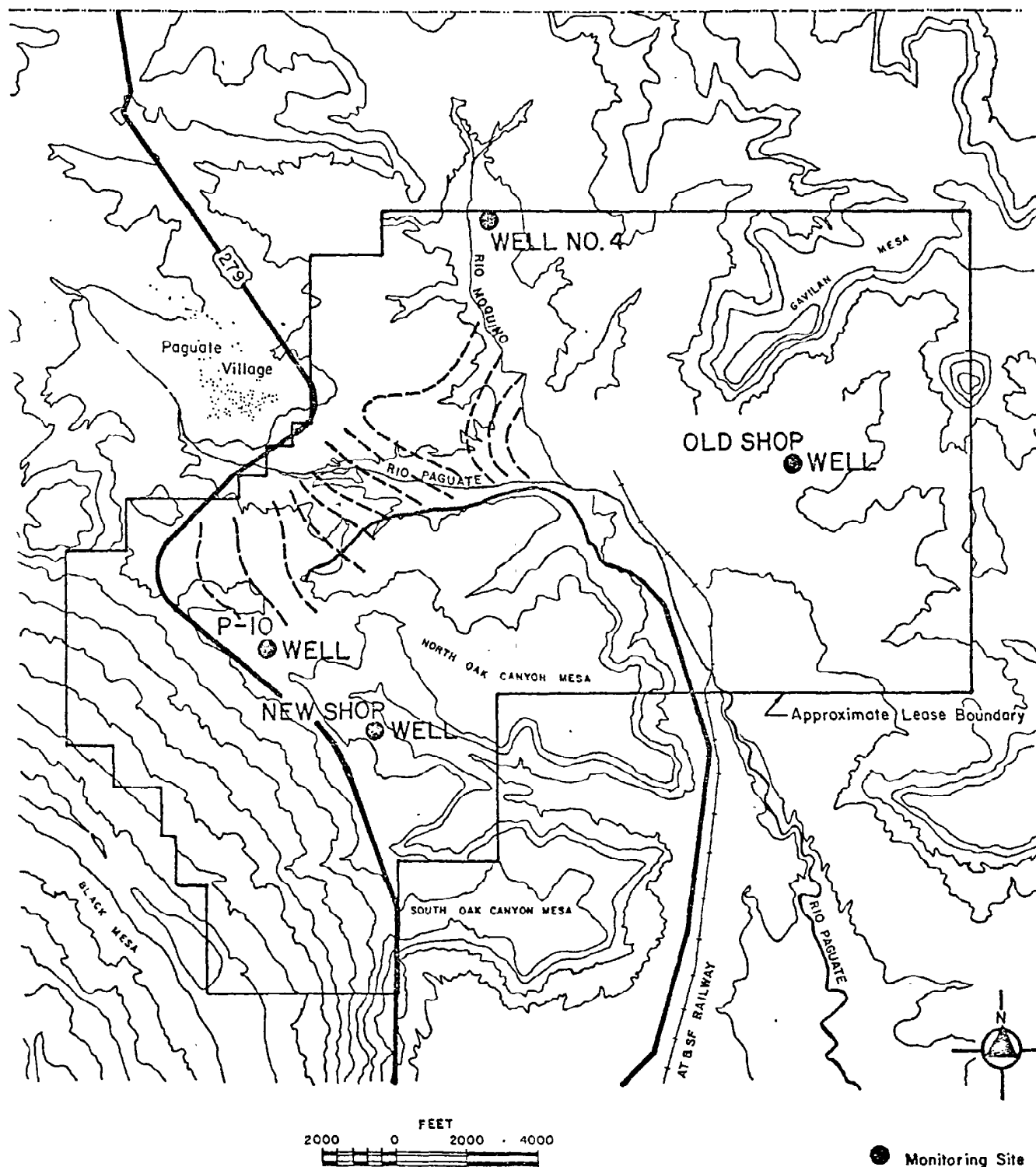
DATE: September, 1980

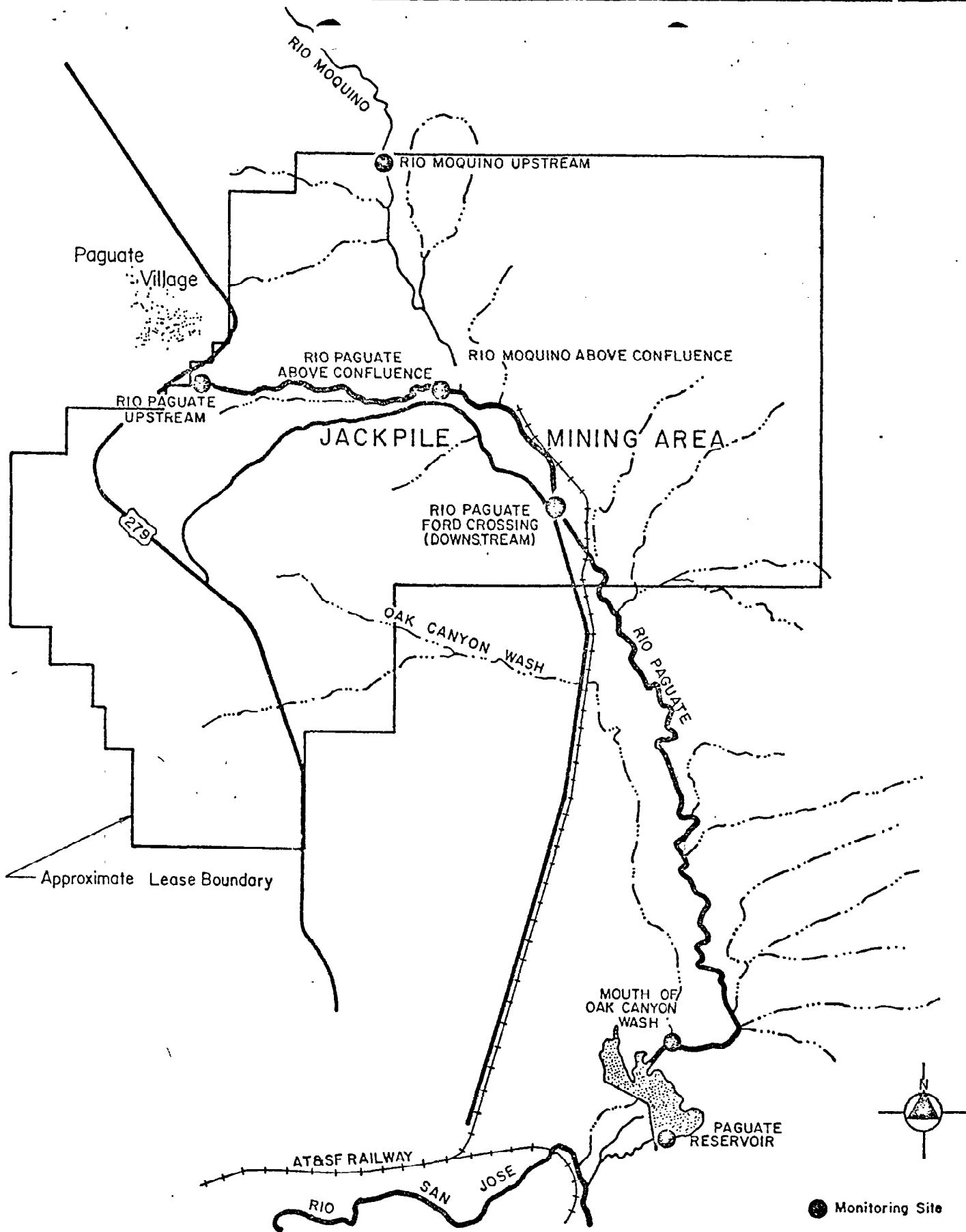
DESCRIPTIVE LOCATION	DATE	pH	TDS ppm	Cond umhos	HCO ₃ ⁻ ppm	Cl ⁻ ppm	SO ₄ ⁼ ppm	Na ⁺ ppm	K ⁺ ppm	Ca ⁺⁺ ppm	Mg ⁺⁺ ppm	NO ₃ ⁻ ppm	F ⁻ ppm	SiO ₂ ppm	Mn ⁺⁺ ppm		
Rio Paguete (Upstream)	9-16-80	8.2	580	745	354	15	187	39	4	100	35	< 1	0.40	25	< 0.10		
Rio Moquino (Upstream)	9-16-80	8.0	1568	1995	208	17	977	180	13	166	95	< 1	0.59	17	< 0.10		
Rio Paguete (Above the Confluence)	9-16-80	8.1	669	840	283	16	288	60	6	87	48	< 1	0.50	24	< 0.10		
Rio Moquino (Above the Confluence)	9-16-80	8.0	2158	2610	231	22	1375	265	15	208	142	2	0.88	16	< 0.10		
Rio Paguete (Ford Crossing)	9-16-80	8.0	1859	2397	280	25	1123	225	14	187	128	< 1	0.74	18	< 0.10		
Paguete Reservoir	9-16-80	7.6	1144	1400	122	13	727	81	12	191	48	< 1	0.67	11	< 0.10		
Jackpile #4	9-16-80	8.6	940	1200	596	21	372	284	2	4	< 1	1	1.10	12	< 0.10		
Jackpile New Shop	9-16-80	8.2	1351	2000	398	29	669	422	5	14	1	2	1.18	14	< 0.10		
Jackpile Old Shop	9-22-80	8.1	2389	3100	298	69	1400	452	12	160	108	29	0.91	12	< 0.10		
		As ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm	Cu ppm	Fe ppm	Zn ppm	Mo ppm	Ni ppm	V ppm			
Rio Paguete (Upstream)	9-16-80	< 0.005	< 0.05	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	0.001	< 0.005	0.009	0.008	< 0.005	< 0.01			
Rio Moquino (Upstream)	9-16-80	< 0.005	0.08	< 0.001	< 0.005	< 0.005	< 0.0005	< 0.005	0.003	< 0.005	0.010	0.006	< 0.005	< 0.01			
Rio Paguete (Above the Confluence)	9-16-80	< 0.005	0.05	< 0.001	< 0.005	< 0.005	< 0.0005	< 0.005	0.003	0.016	0.003	0.010	< 0.005	< 0.01			
Rio Moquino (Above the Confluence)	9-16-80	< 0.005	0.07	< 0.001	< 0.005	< 0.005	0.0009	< 0.005	0.002	< 0.005	0.002	0.006	< 0.005	< 0.01			
Rio Paguete (Ford Crossing)	9-16-80	< 0.005	0.09	< 0.001	< 0.005	< 0.005	0.001	< 0.005	0.002	< 0.005	0.004	0.007	< 0.005	< 0.01			
Paguete Reservoir	9-16-80	< 0.005	0.10	< 0.001	< 0.005	< 0.005	< 0.0005	< 0.005	0.002	0.045	0.008	0.010	< 0.005	< 0.01			
Jackpile #4	9-16-80	< 0.005	< 0.05	< 0.001	< 0.005	< 0.005	< 0.0005	< 0.005	0.005	0.005	< 0.001	0.005	< 0.005	< 0.01			
Jackpile New Shop	9-16-80	< 0.005	< 0.05	< 0.001	< 0.005	< 0.005	< 0.0005	< 0.005	0.001	< 0.005	0.230	0.007	< 0.005	< 0.01			

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LOCATION OF GROUND WATER MONITORING STATIONS





LOCATION OF
SURFACE WATER MONITORING STATIONS

JACKPILE - AIR SAMPLING SURVEY

THIRD QUARTER, 1980

<u>LOCATION</u>	<u>DATE</u>	Total Particulate	U-Nat.	Ra-226	Th-230	Pb-210
		<u>mg/M³ x 10⁻⁸</u>	<u>µci/ml x 10⁻¹⁵</u>	<u>µci/ml x 10⁻¹⁵</u>	<u>µci/ml x 10⁻¹⁵</u>	<u>µci/ml x 10⁻¹⁵</u>
1. Dump F	7/80	7.19	4.93	4.30	3.92	23.42
	8/80	4.97	18.51	2.26	1.81	40.63
	9/80	3.02	1.38	0.69	1.55	
2. Mine Vent	7/80	NS	NS	NS	NS	NS
	8/80	5.64	19.45	1.87	1.13	17.73
	9/80	3.19	17.03	13.10	15.28	
3. West Gate	7/80	7.90	1.38	3.02	0.69	22.41
	8/80	5.71	10.36	1.61	1.77	30.20
	9/80	5.54	3.73	2.80	0.88	
4. Well #4	7/80	4.98	4.39	1.52	1.77	21.95
	8/80	6.01	5.94	0.68	1.14	31.25
	9/80	4.40	0.79	0.95	2.54	

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JACKPILE - AMBIENT RADON STUDY

THIRD QUARTER, 1980

<u>LOCATION</u>	<u>DATE</u>	<u>Rn-222</u> <u>pCi/l</u>
1. Dump F	7/80	NS
	8/80	2.01
	9/80	1.38
2. Mine Vent	7/80	NS
	8/80	1.27
	9/80	1.46
3. Well #4	7/80	NS
	8/80	1.90
	9/80	1.60
4. Westgate	7/80	NS
	8/80	1.13
	9/80	NS

LOCATION OF AIR QUALITY MONITORING STATIONS

